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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/725,388	12/03/2003	Man Wong	016660-188	4979
21839	7590	11/28/2005	EXAMINER	
BUCHANAN INGERSOLL PC (INCLUDING BURNS, DOANE, SWECKER & MATHIS) POST OFFICE BOX 1404 ALEXANDRIA, VA 22313-1404			WEISS, HOWARD	
			ART UNIT	PAPER NUMBER
			2814	

DATE MAILED: 11/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/725,388

Applicant(s)

WONG ET AL.

Examiner

Howard Weiss

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

Attorney's Docket Number: 016660-188

Filing Date: 12/3/03

Continuing Data: Division of 10/050,858 (1/18/02 now U.S. Patent No. 6,677,176)

Claimed Foreign Priority Date: none

Applicant(s): Wong et al. (Zohar)

Examiner: Howard Weiss

***Specification***

1. The disclosure is objected to because of the following informalities: ---now U.S. Patent No. 6,677,176--- should be inserted after "January 18,2002" in Line 3 Page 1 in the Specification as amended 12/3/03. Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1 to 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitchell et al. (U.S. Patent No. 5,573,679) and Murphy (U.S. Patent No. 4,993,072).

Mitchell et al. show most aspects of the instant invention (e.g. Figure 1) including:

- a sensing electrode **22** made of Ti or Al
- a counter electrode **12** made of two layers of silicon nitride and a conducting material
- said counter electrode is a perforated, rigid back-plane membrane

Mitchell et al. do not show the sensing electrode connected to the gate of a sensing transistor, the conducting material in said counter electrode made of polysilicon, the counter electrode formed of two layers of conducting material and the explicit operational voltages and charging functions as claimed. Murphy teaches (e.g. Figures 1 and 3) to connect the sensing electrode **33** to the gate electrode of a sensing transistor **40** (via resistor **38**) and to make the counter electrode of two conductor layers **26,27** to reduce stray capacitance (Column 1 Lines 53 to 61). It would have been obvious to a person of ordinary skill in the art at the time of invention to connect the sensing electrode to the gate electrode of a sensing transistor and to make the counter electrode of two conductor layers as taught by Murphy in the device of Mitchell et al. to reduce stray capacitance. Additionally, the use of polysilicon as a conductor is well known in the art and, therefore, obvious to use in the device of Mitchell et al.

In reference to the claim language referring to the explicit operational voltages and charging functions as claimed, intended use and other types of functional language must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. *In re Casey*, 152 USPQ 235 (CCPA 1967); *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). In this case, the device of Mitchell et al. and Murphy show all the claimed structure of the instant invention and, therefore, is capable of perform the operational voltages and charging functions as claimed.

4. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitchell et al. and Murphy, as applied to Claim 1 above, and further in view of Summerfelt (U.S. Patent No. 5,585,300).

Mitchell et al. and Murphy discloses the claimed invention (Paragraph 3) except for explicitly showing the second conducting material sandwiched between two layers of the first conducting material. Summerfelt teaches (e.g. Column13) that capacitor electrodes **40** made of multiple layers of conductors, such as Al and Ti, is well known in the art. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the second conducting material sandwiched between two layers of the first conducting material, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

#### ***Response to Arguments***

5. Applicant's arguments filed 9/26/05 have been fully considered but they are not persuasive. The Applicants state that the invention of Murphy is an electret which is different form the instant invention and, therefore, not applicable. However, the Murphy patent, as applied in the rejection herein, is used as a secondary reference to alleviate the missing features of the primary reference, Mitchell et al. In particular, the preamp with the gate of the FET **40** connected to the sensing electrode **33** via resistor **38** (i.e.  $R_1$  in Figure 3) and making the counter electrode of two layers does reduce stray capacitance and can be applied to any capacitive microphone such as that described in Mitchell et al.

In reference to the use of polysilicon, there are methods available to construct a capacitive microphone using polysilicon which would preserve and protect other silicon features in the device.

In response to applicant's argument that the capacitor structures and materials taught by Summerfelt is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, the features taught by Summerfelt et al. can be applied to all capacitor or capacitor type devices such as the microphones discussed herein.

In view of these reasons and those set forth in the present office action, the rejections of the stated claims stand.

#### ***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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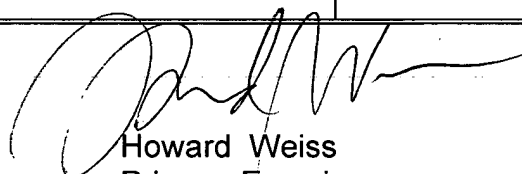
you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at **866-217-9197** (toll-free).

8. Papers related to this application may be submitted directly to Art Unit 2814 by facsimile transmission. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (15 November 1989). The Art Unit 2814 Fax Center number is **(571) 273-8300**. The Art Unit 2814 Fax Center is to be used only for papers related to Art Unit 2814 applications.
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Howard Weiss at **(571) 272-1720** and between the hours of 7:00 AM to 3:00 PM (Eastern Standard Time) Monday through Friday or by e-mail via **Howard.Weiss@uspto.gov**. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy, can be reached on **(571) 272-1705**.

10. The following list is the Examiner's field of search for the present Office Action:

Field of Search	Date
U.S. Class / Subclass(es): 257/ 254, 416; 381/174	thru 11/17/05
Other Documentation: none	
Electronic Database(s): EAST	thru 11/17/05

HW/hw  
17 November 2005

  
Howard Weiss  
Primary Examiner  
Art Unit 2814